

REMARKS

In accordance with the above amendments, the language of the claims has been amended to overcome the rejection under 35 U.S.C. § 112, 2nd paragraph, for what the Examiner believed was inconsistency in the description of the polymer. In this regard it is believed that changing "poly(tetramethylene adipate)" to "poly(1, 4-butanediol adipate)" makes it chemically consistent with the term "polyester polyol", support is also found at page 8, line 36 of the specification.

With respect to the documents cited in the rejection of the claims on the merits, Applicant remains convinced that none of the combinations of cited references disclose or teach the claimed combination propellant. Each teach and lead one away from making the claimed combination in one way or another, although in total the ingredients of the combination may be disclosed. Applicant does not claim to have invented new compounds.

Note, for example, that Bradford '778 teaches a "chlorine-free" solid rocket propellant whereas the oxidizers of the presently claimed invention must contain a perchlorate. Bradford teaches the person skilled in the art that when using PTMA as a polyester polyol pre-polymer, the oxidizer used must be free of chlorine. Thus, Bradford, et al., teach away from the present invention.

In the Applicant's opinion, Willer '523 may be the closest prior art because it discloses ammonium perchlorate oxidizer, aluminum as fuel, a polyester polyol prepolymer with a molecular weight of 6,000 (in Example 3) and a plastisizer: polymer ratio in the range from 1.5 to 3.0. However, the oxidizer used in Example 3 of Willer '523 together with the polyester polyol prepolymer consists of a combination of a ammonium perchlorate and either HMX or RDX.

Note that the problem underlying the present invention compared to Willer was to

provide a propellant composition in which neither HMX or RDX had to be used as an oxidizing components. This problem was solved by the propellant composition according to claim 70 in which the binder contains a special polyester polyol prepolymer, namely PTMA, and in which the plasticizer: polymer ratio is less than 1:6, and the oxidizer is ammonium perchlorate or alone or in combination with sodium nitrate.

It is further submitted in the same vein that the patents of the combination including Sutton, et al., each teach a way in one or more respect from making the claim combination of the present invention. Applicant further believes that there is no showing that it would be obvious to combine all of the ingredients in the claimed combination based on the prior art and that one would never reach the necessity of optimizing a result.

In view of the above amendments taken together with the remarks herein, Applicant believes his claims to be in compliance with 35 U.S.C. § 112 and also to clearly distinguish over the cited references taken either singularly or in any suggest combination. Accordingly, Applicant respectfully requests the Examiner to reconsider and allow the present claims.

Respectfully submitted,

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